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**Yamaoka et al.**

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(54) **DOOR BODY HOLDING STRUCTURE**

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USPC ..... **16/342**; 16/319; 16/356; 16/374

(58) **Field of Classification Search**
USPC ..... 16/82, 224, 319, 321, 342, 355, 356, 16/360, 363, 374, 377
See application file for complete search history.

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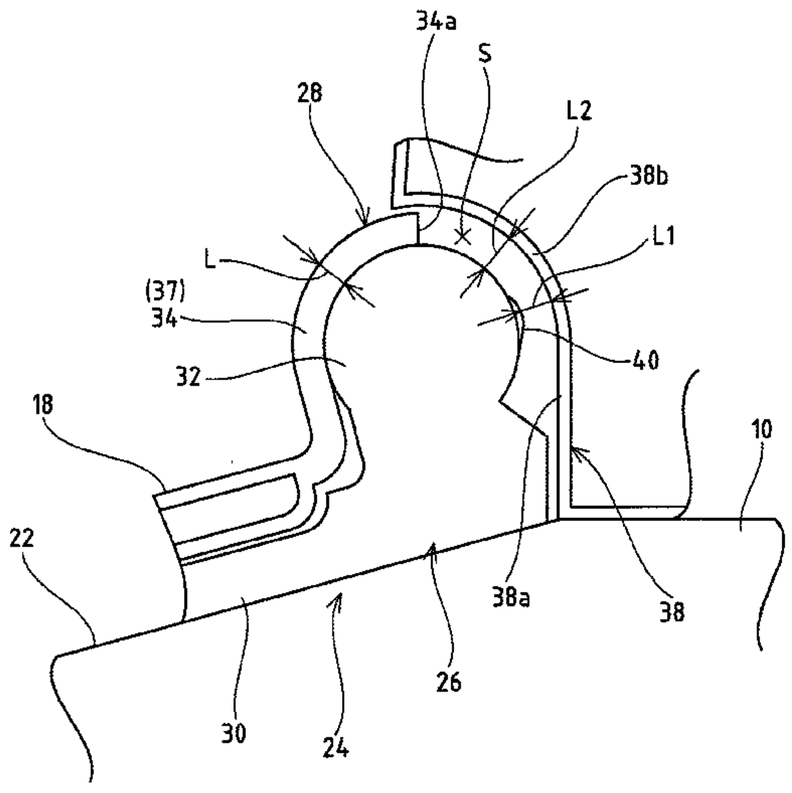
(57) **ABSTRACT**

A door body holding structure that can hold a door body at an open position by using a simple configuration. A projecting portion **40**, which projects toward a containing wall **38** side, is provided on an outer surface of a bearing portion **32** of a fixed-side hinge at a position facing the containing wall **38** where the projecting portion **40** does not come into contact with an inner surface of a guide portion **34** when the door body **18** is at a closed position but the projecting portion **40** comes into contact with the inner surface of the guide portion **34** when the door body **18** is at the open position. A separation dimension between a projecting end of the projecting portion **40** and the containing wall **38** is set to be smaller than a thickness dimension of the guide portion **34**. That is, when the inner surface of the guide portion **34** reaches the position at which it comes into contact with the projecting portion **40** by pivoting movement of the door body **18** from the closed position toward the open position, the guide portion **34** is sandwiched and held between the projecting portion **40** and the containing wall **38**, thereby holding the door body **18** at the open position.

**1 Claim, 5 Drawing Sheets**



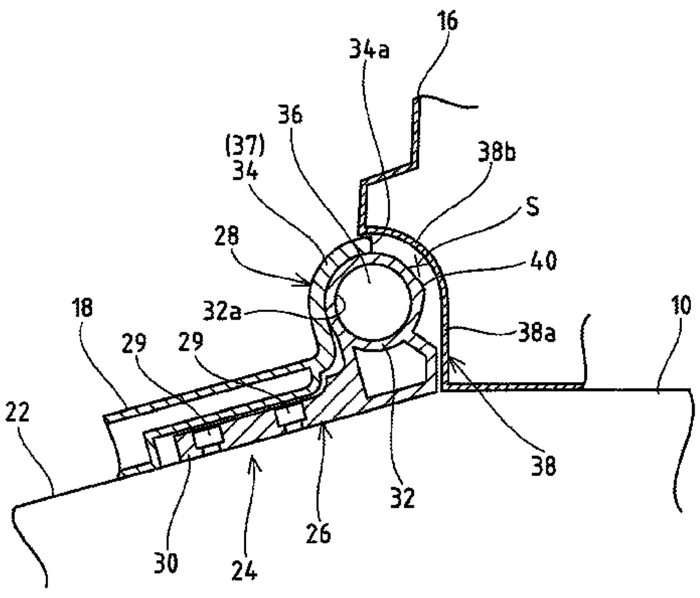



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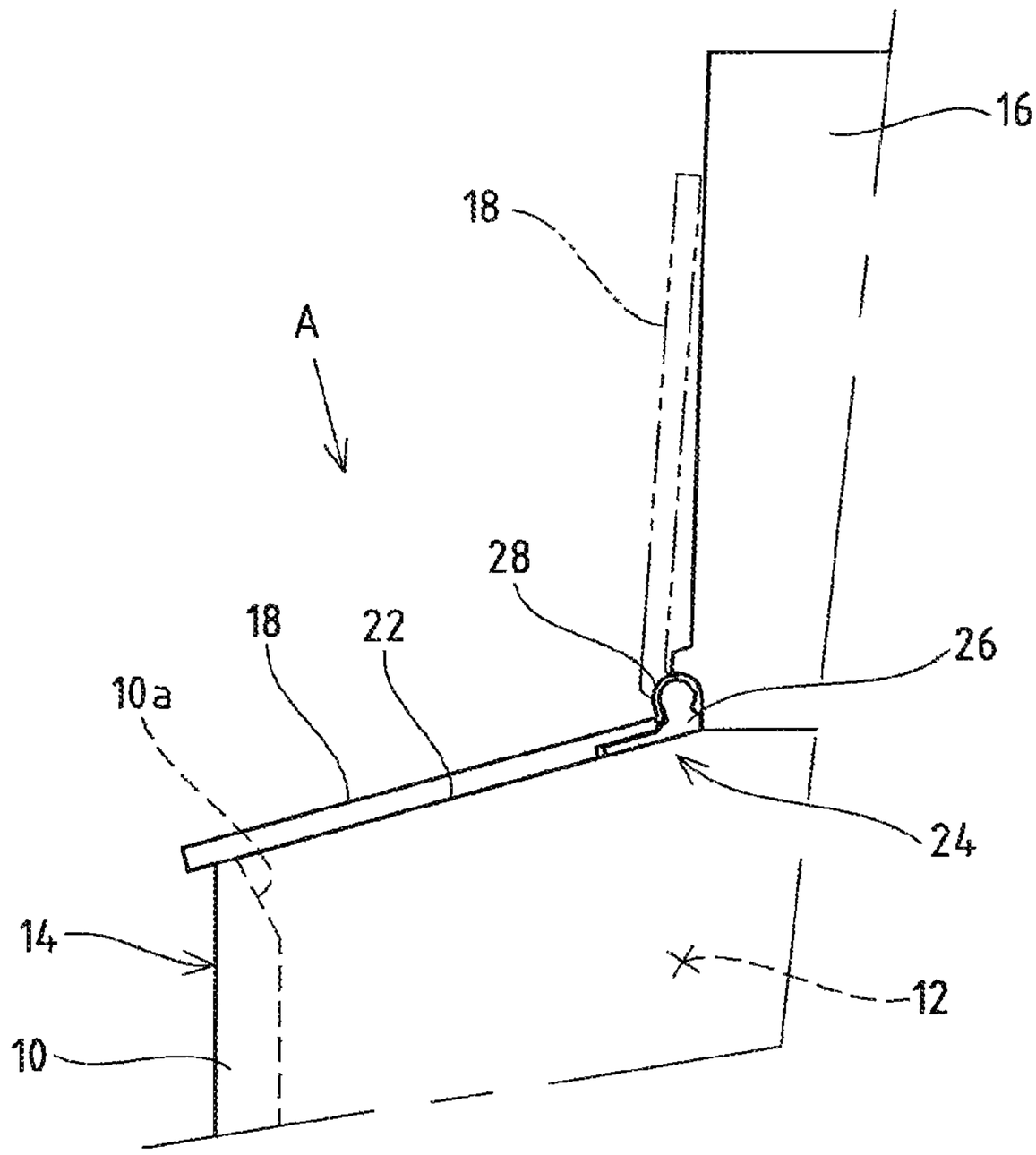
Fig. 1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18
A
28
18
22
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10a
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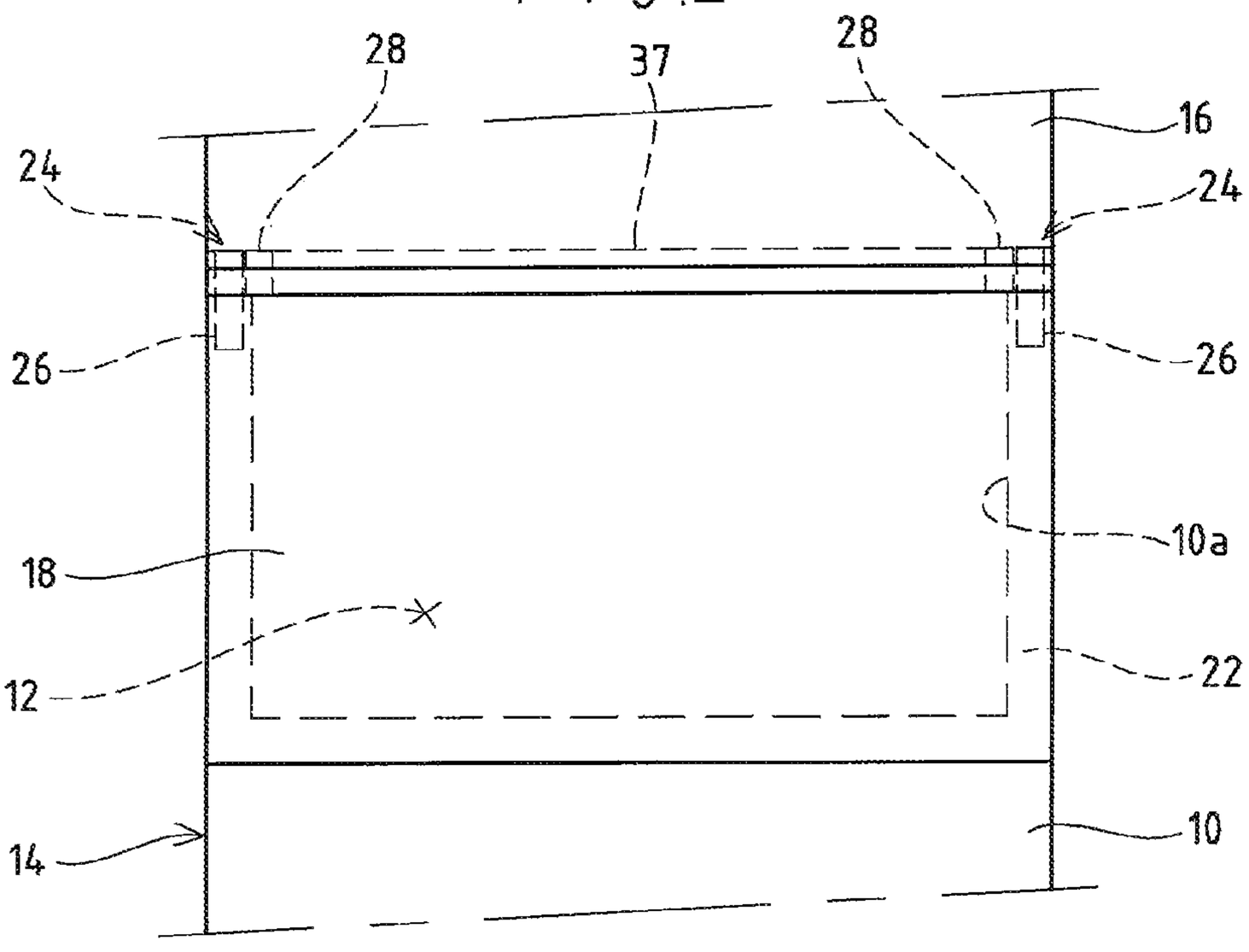
14
12
10

Fig. 2


28
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18
12
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14
10

Fig.3

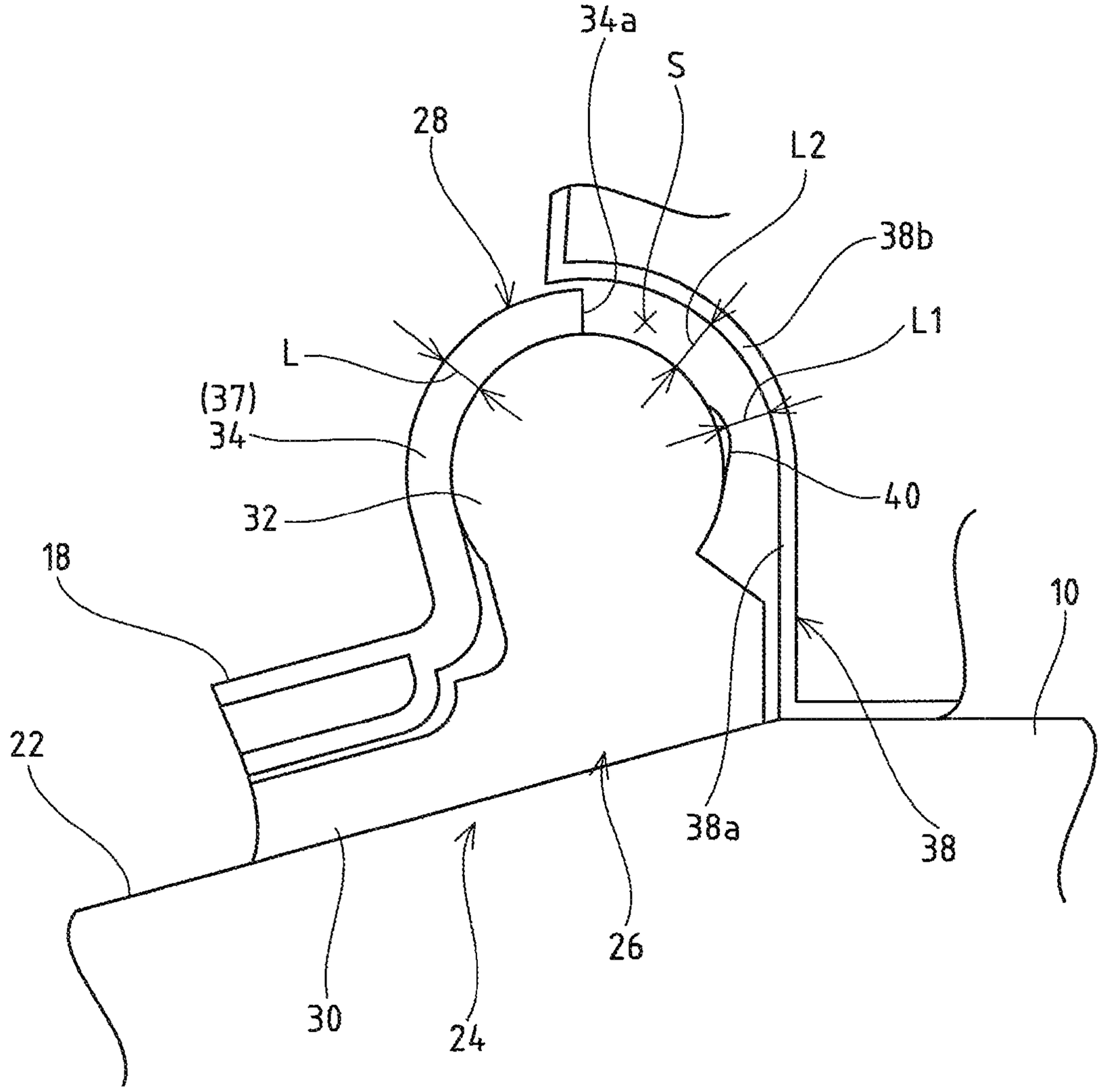
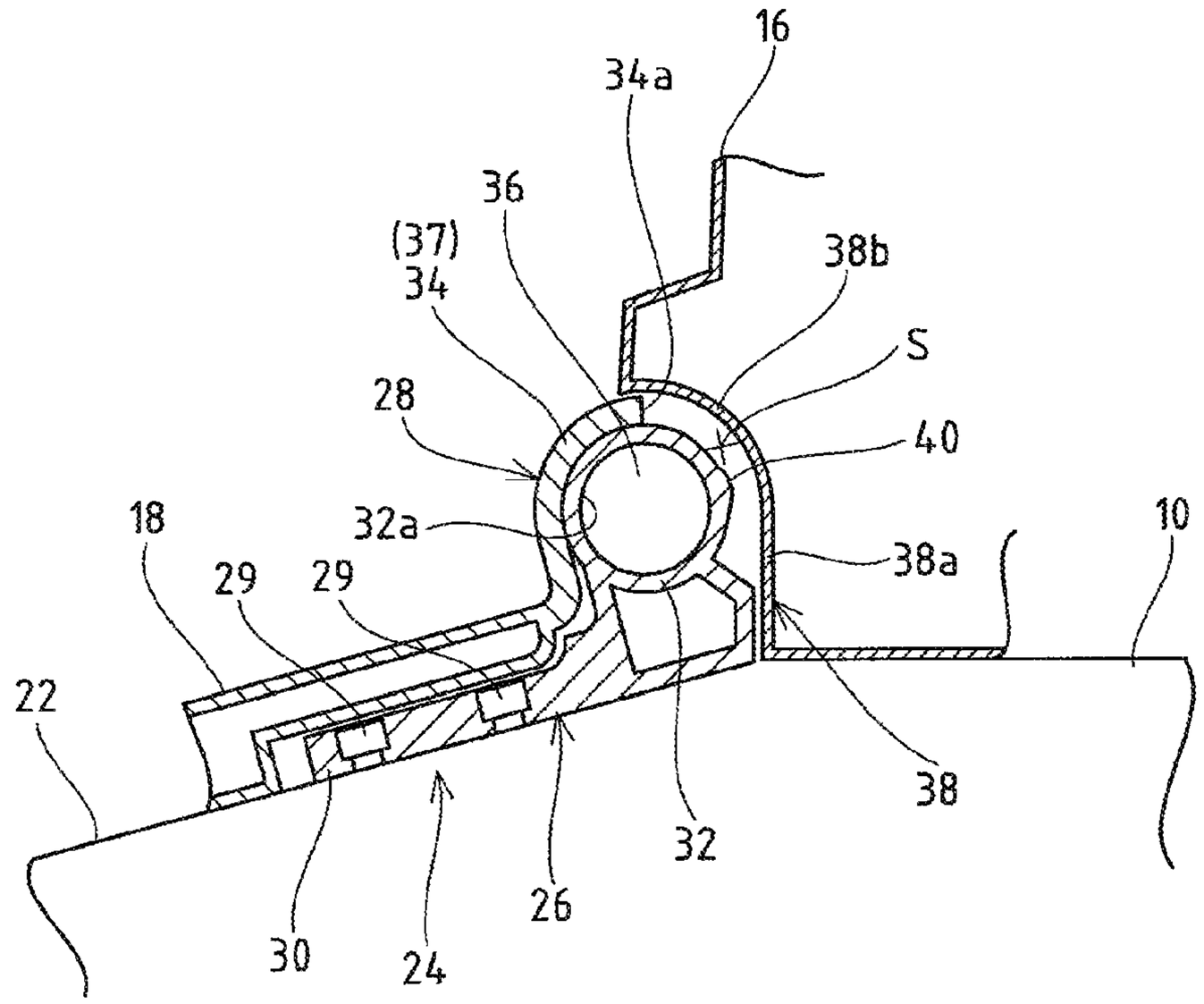


Fig.4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34a
36
(37)
34
38b
S
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40
18
32a
10
38a
29
29
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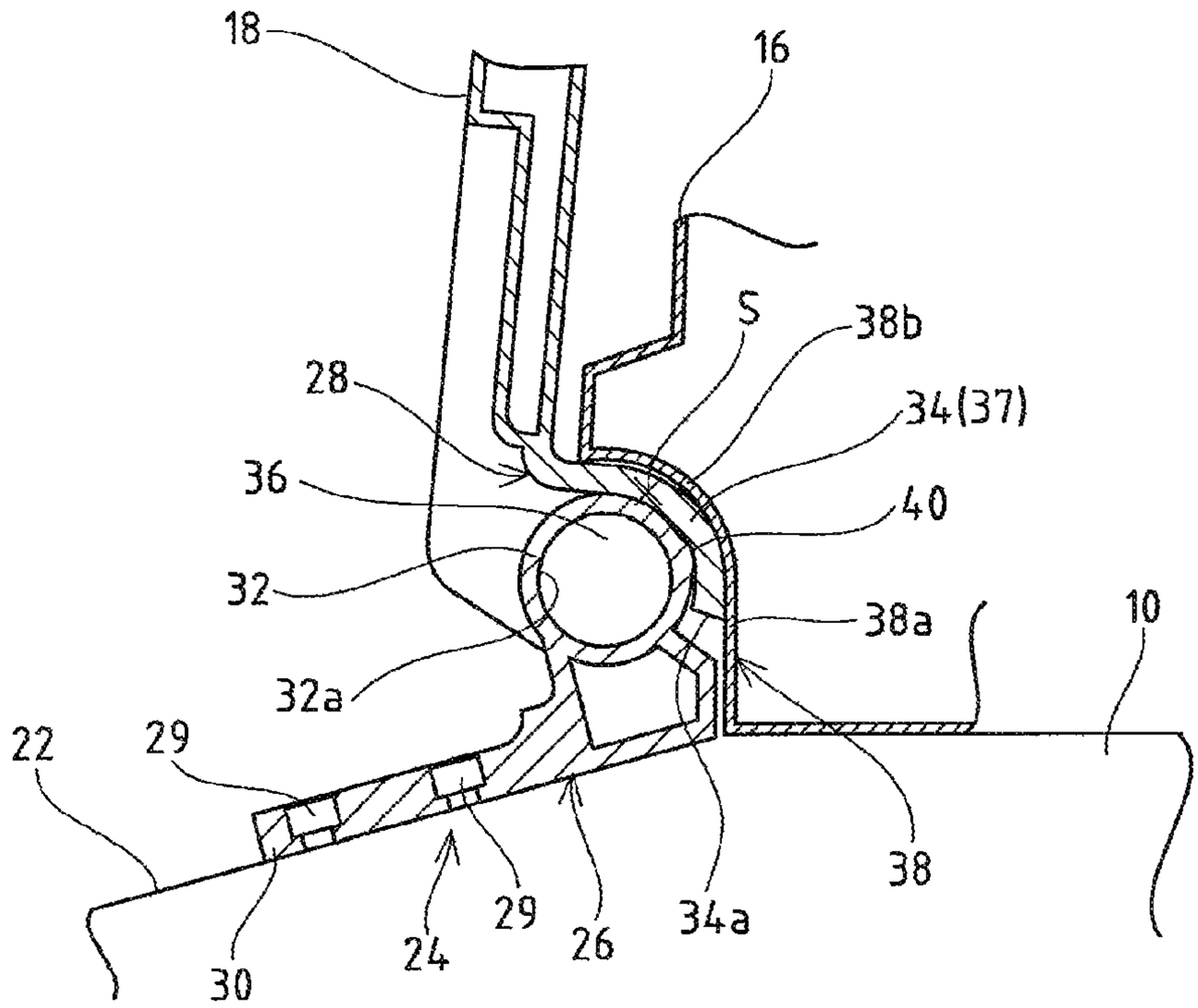
38
32
26
30
24

Fig.5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16
S
38b
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34(37)
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40
32
38a
10
32a
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38
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34a
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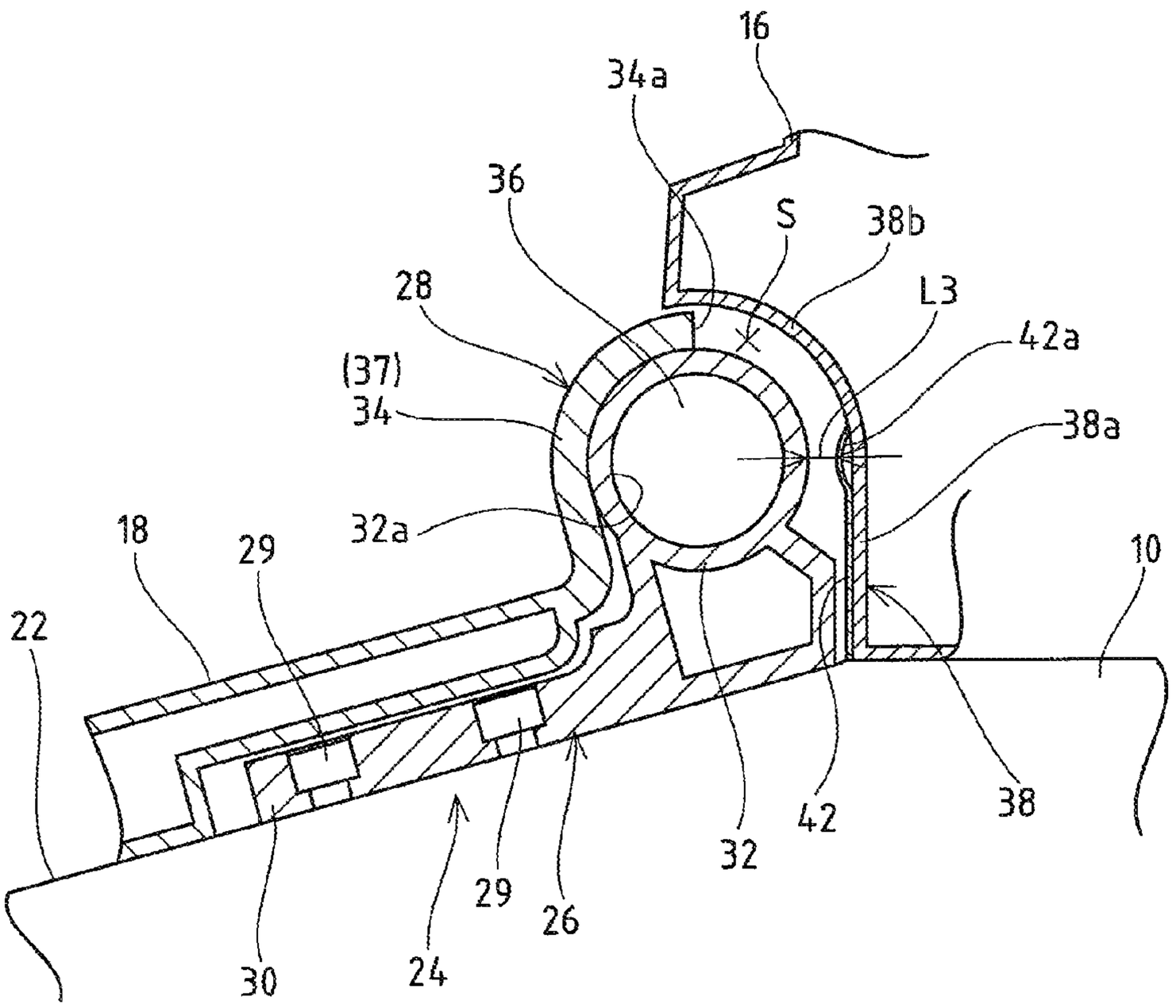
26
30

Fig.6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34a
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S
38b
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42
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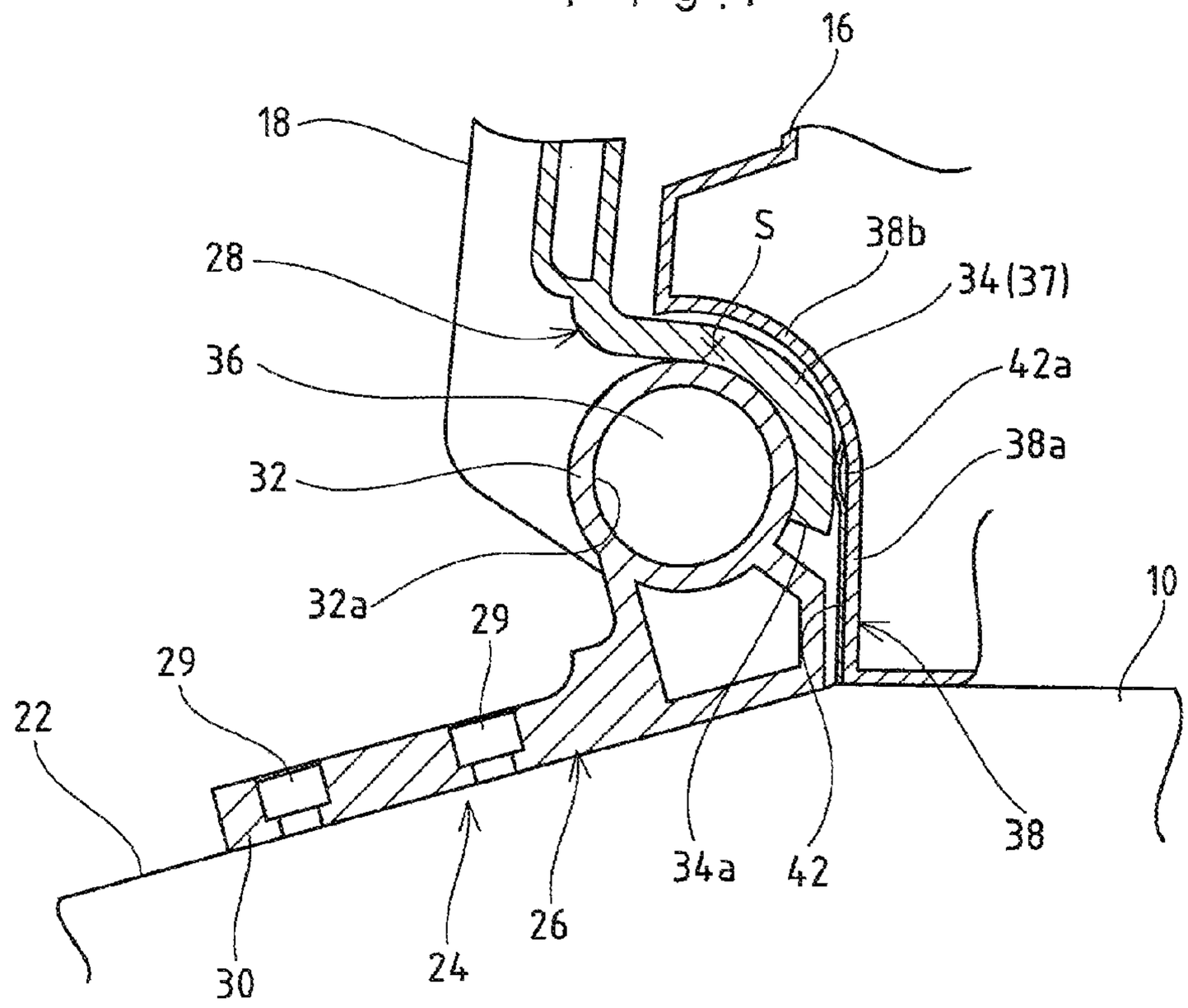
26
30
24

Fig.7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34(37)
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32a
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22
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34a
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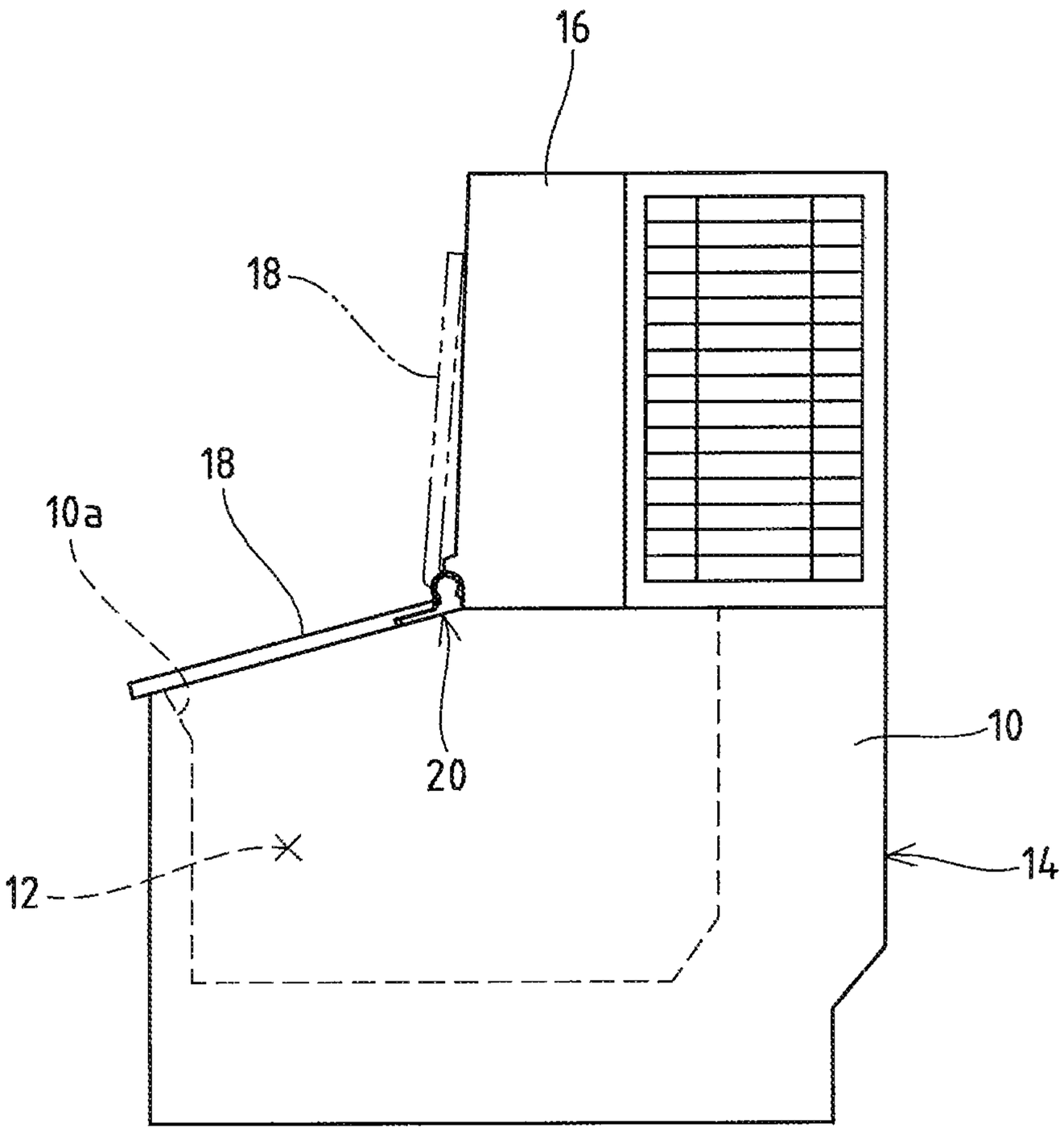
Fig.8

[Prior Art]



# DOOR BODY HOLDING STRUCTURE

## TECHNICAL FIELD

The present invention relates to a holding structure for a door body that is arranged on a housing in an openable/closable manner.

## BACKGROUND ART

An automatic icemaker that continuously produces ice pieces, each haying a required shape is preferably utilized in facilities in, e.g., a café or a restaurant or any other kitchens. As shown in FIG. **8**, in the automatic icemaker, a housing **10** having a heat-insulated structure formed into a required shape includes an ice storage house **14** having an ice storage room **12** storing a required quantity of ice pieces defined therein. A cabinet **16** accommodating an ice making mechanism (not shown) that produces ice pieces is arranged at a rear portion of an upper surface of the ice storage house **14**, and the ice pieces produced by the ice making mechanism are sequentially ejected into the ice storage room **12** to be stored.

An ice discharge opening **10***a* for ice discharge, which is opened in an obliquely upward direction toward a front side, is opened at a position of the ice storage house **14** facing the front side of the cabinet **16**. Further, a door body **18** that can open and close the ice discharge opening **10***a* is arranged on the housing **10** through a hinge device **20** at an upper end edge portion of the door body **18** so as to allow pivoting movement of the door body **18**, and the door body **18** is configured to pivot between a closed position (a position indicated by a solid line in FIG. **8**) at which the ice discharge opening **10***a* is closed and an open position (a position indicated by an alternate long and two short dashes line in FIG. **8**) at which the ice discharge opening **10***a* is opened when a front end side is lifted up with the hinge device **20** functioning as a supporting point.

The door body **18** is held while being rested against a front surface of the cabinet **16** at the open position. That is, since the door body **18** is simply placed at the open position in such a manner that its gravity center is closer to the cabinet side apart from the supporting point of the hinge device **20**, the door body **18** may be possibly pivoted to the closed position when the door body **18** moves away from the cabinet **16** due to vibration and others involved by an operation of the ice making mechanism. Therefore, an operator takes out the ice pieces with one hand while holding the door body **18** at the open position with the other hand, whereby an operation of taking out the ice pieces is complicated.

As a configuration that holds at the open position the door body that is arranged on the main body through the hinge device in the openable/closable manner, for example, Patent Document 1 disclose a configuration that an elastic member having a gear-like shape is arranged on a door body side, a bearing portion that meshes with the elastic member is arranged on a main body side, and the elastic member elastically meshes with the bearing portion at a position the door body is pivoted to, thereby holding the door body at the open position.

## PRIOR ART DOCUMENTS

### Patent Document

Patent Document 1: Japanese Patent Application Publication No. Hei 8-116185



## DISCLOSURE OF INVENTION

### Problem to be Solved by the Invention

In the hinge device, disclosed in Patent Document 1, the door body can be held at an arbitrary angle position with the elastic member of the door, body meshing with the bearing portion of the main body. That is, the elastic member requires elastic force that maintains a mesh state with respect to the bearing portion without being elastically deformed due to a weight of the door body. In other words, since the elastic force of the elastic member proportionately rises as the weight of the door body increases, a burden when forcibly elastically deforming the elastic member to pivot the door body increases. Therefore, it is very much a situation in which the hinge device disclosed in Patent Document 1 cannot be adopted for the door body whose weight increase due to, the heat-insulated stricture like the door body arranged in the automatic icemaker. Furthermore, drawbacks of the hinge device disclosed in Patent Document 1, i.e., a complicated configuration and a high cost are also pointed out.

In view of the problems inherent in the conventional technology, it is an object of the present invention to preferably solve these problems and provide a door body holding structure that can hold a door body at an open position by using a simple configuration.

### Means for Solving Problem

To solve the problems and achieve the expected object, there is provided a door body holding structure according to claim **1** of the present invention, which is a door body holding structure that is pivotally supported at an upper end portion of a housing to be pivotable in a vertical direction and configured to be pivoted between a closed position at which an opening portion formed in the housing is. Closed and an open position at which the opening portion is opened based on upward pivoting movement from the closed position, the door body holding structure comprising:

a fixed-side hinge that is arranged on the housing;

a movable-side hinge that is arranged at an upper end portion of the door body and pivotally supported on the fixed-side hinge in a pivotable manner;

a sandwiched portion that is provided to the door body and configured to move on an outer side of the fixed-side hinge with the pivoting movement of the door body;

a holding portion that is provided to the housing to define between, the fixed-side hinge and itself a containing space configured to accommodate the sandwiched portion; and

a sandwiching portion that is placed in the containing space and reduces a facing gap between the fixed-side hinge and the holding portion in the containing space to be smaller than a thickness dimension of the sandwiched portion,

wherein the sandwiching portion is provided at, a position where the sandwiched portion is sandwiched and held between the sandwiching portion and the fixed side hinge or the holding portion when the door body is at the open position.

### Effect of the Invention

According to the door body holding structure of the present invention, the door body can be held at the open position by using the simple configuration.

## BRIEF DESCRIPTION OF DRAWINGS

FIG. **1** is a side view showing a primary part of an automatic icemaker adopting a door body, holding structure according to Embodiment 1;

FIG. **2** is a schematic view showing a region where a door body is arranged in the automatic icemaker according to Embodiment 1 from a view A direction in FIG. **1**; and

FIG. **3** is an explanatory view showing a relationship between a thickness of a guide, portion and a separation dimension between a projecting portion and a containing wall in the door body holding structure according to Embodiment 1;

FIG. **4** is a primary part cross-sectional view showing a pivot portion between a door body and a housing according to Embodiment 1 in a state that the door body is at a closed position;

FIG. **5** is a primary part cross-sectional view showing the pivot portion between the door body and the housing according to Embodiment 1 in a state that the door body is at an open position;

FIG. **6** is primary art cross-sectional view showing a pivot portion between a door body and a housing according to Embodiment 2 in a state that, the door body is at a closed position;

FIG. **7** is a primary part cross-sectional view showing the pivot portion between the door body and the housing according to Embodiment 2 in a state that the door body is at an open position; and

FIG. **8** is a side view showing a general automatic icemaker.

## BEST MODE(S) FOR CARRYING OUT THE INVENTION

A door body holding structure according to the present invention will, now be described hereinafter based on preferred embodiments with reference to the accompanying drawings. In the embodiments, a door body arranged on, an ice storage house in an automatic icemaker will be described. Moreover, since a configuration of the automatic icemaker is the same as that described above in conjunction, with FIG. **8**, like reference numerals denote like members, thereby omitting a detailed description thereof. In the following description, when the automatic icemaker in FIG. **8** is seen from a side surface thereof, a side where an ice discharge opening is formed will be referred to as "front", a side where a cabinet is arranged will be referred to as "back", and a direction crossing this front-and-back direction will be referred to as a "left-and-right direction".

### Embodiment 1

As shown in FIG. **1**, an upper surface of an ice storage house **14** facing the front side at a position of a housing **10** where a cabinet **16** is arranged is formed so as be downwardly inclined as getting closer to the front side, and an ice discharge opening (an opening portion) **10***a* communicating with an ice storage room **12** is formed in this inclined surface portion **22** so as to be opened in an upwardly oblique direction toward the front side. Additionally, as shown in FIG. **2**, a door body **18** having a heat-insulated structure that opens and closes the ice discharge opening **10***a* is arranged on the inclined surface portion **22** of the housing **10** in such a manner that the door body **18** can be pivoted in an up-and-down direction through a pair of hinge devices **24**, **24** on left and right sides separated from each other. As indicated by a solid line in FIG. **1**, this door body **18** is configured to be pivoted between a closed position at which the ice discharge opening **10***a* is closed with a lower surface of the door body **18** being appressed against the inclined surface portion **22** and an open position at which an end portion (which will be referred to as a front end hereinafter) of the door body **18**, which is separated from pivot portions of the hinge devices **24**, **24** when the door body **18** is upwardly pivoted from the closed position, opens the ice discharge opening **10***a* facing the upper side. It is to be noted that, at the open position, a gravity center of the door body **18** is close to the cabinet **16** side apart from the pivot portions of the hinge devices **24**, **24**, and the door body **18** is rested against the front surface of the cabinet **16** in such a manner that the front end comes into contact with this front surface.

Each hinge device **24** includes a fixed-side hinge **26** arranged on the inclined upper side of the inclined surface portion **22** of the housing **10** and a movable-side hinge **28** arranged on a side end at the upper end portion of the door body **18**. As shown in FIG. **4** and FIG. **5**, the fixed-side hinge **26** is constituted of a main body portion **30** fixed to the housing **10** through screws **29** and a bearing portion **32** that is protruded on an upper surface on a rear end side (a side close to the cabinet **16**) of the main body portion **30** and has a bearing hole **32***a* extending in the left-and-right direction. The bearing portion **32** is formed into a cylindrical shape whose outer end sides in the left-and-right direction are closed, and the bearing hole **32***a* is opened to an inner end side. That is, the bearing hole **32***a* in the fixed-side hinge **26** arranged on the right-hand side of the housing **10** is opened on the left-hand side (the fixed-side hinge **26** side on the left), and the bearing hole **32***a* in the fixed-side hinge **26** arranged on the left-hand side is opened on the right-hand side (the fixed-side hinge **26** side on the right).

Each movable-side hinge **28**, includes a guide portion (a sandwiched portion) **34** that fits on the bearing portion **32** of the corresponding fixed-side hinge **26** to allow its pivoting motion and a shaft portion **36** fitted and inserted into the beating hole **32***a* of the fixed-side hinge **26** from the inner side to allow its pivoting motion. That is, the shaft portions **36**, **36** of both the movable-side hinges **28**, **28** are fitted and inserted into the bearing holes **32***a*, **32***a* of the corresponding fixed-side hinges **26**, **26**, and the door body **18** is arranged on the housing **10** to allow its pivoting motion with the guide portions **34**, **34** being fitted on the bearing portions **32**, **32**. The guide portion **34** is formed into an arc-like shape to be concentric with the shaft portion **36**, the guide portion **34** is fitted on the bearing portion **32** from the front side to the upper side when the door body **18** is at the closed position shown in FIG. **4**, and its open end portion **34***a* is set be provided at a position substantially immediately above the central position of the bearing portion **32**. Further, the guide portion **34** is configured in such a manner that the open end portion **34***a* moves to the back side (the cabinet **16** side) along the outer side of the bearing portion **32** when the door body **18** is pivoted toward the open position (in a clockwise direction in FIG. **4**) (see FIG. **5**).

As shown in FIG. **4**, a containing wall (a holding portion) **38** that partially covers, the bearing portion **32** in the fixed-side hinge **26** from the back, side is provided at a front surface lower end portion of the cabinet **16**. This containing wall **38** is formed of a vertical portion **38***a* extending from the upper surface of the housing **10** toward, the substantially vertically upper side and an arc-shaped portion **38***b* extending from an upper end of the vertical portion **38***a* toward the front side in an arc-like shape recessed on a lower side, and the containing wall **38** has necessary elasticity. Furthermore, an arc-shaped containing space S that is opened on the upper side of the bearing portion **32** toward the front side is defined between the containing wall **38** and the bearing portion **32** of the fixed-side hinge **26**, and the containing space S is configured to contain the guide portion **34** of the movable-side hinge **28** when the door body **18** is pivoted from the closed position toward the open position. The arc-shaped portion **38***b* of the

containing wall **38** is formed into an arc-like shape to be concentric with the bearing portion **32**, and the containing space S defined between the arc-shaped portion **38***b* and the bearing portion **32** is also formed into an arc-like shape to be concentric with the bearing portion **32**. It is to be noted that, in Embodiment 1, the open end portion **34***a* of the guide portion **14** is placed in the containing space S apart from a front end of the arc-shaped portion **38***b* of the containing wall **38** when the door body **18** is at the closed position as shown in FIG. **4**, whereby the open end portion **34***a* of the guide portion **34** is prevented from coming into contact with the front end of the arc-shaped portion **38** to avoid inhibition of the pivoting movement when the door body **18** is pivoted, from the closed position toward the open position.

A flange portion **37** is formed at an upper end portion of the door body **18** over the entire length in the left-and-right direction (see FIG. **2**), and left and right end portions of the flange portion **37** are configured to also function as the guide portions **34**, **34** of both the movable-side hinges **28**, **28**. Moreover, the containing wall **38** of cabinet **16** is formed over the entire length of the cabinet **16** in the left-and-right direction, and the open end (the open end portion **34***a*) of the flange portion **37** of the door body **18** is placed in the containing space S over the entire length to be apart from the front end of the arc-shaped portion **38***b* of the containing wall **38** when the door body **18** is at the closed position. That is, these members are configured in such a manner that dew condensation water, which is generated and flows down on the front surface of the cabinet **16**, can flow down on the surface of the door body **18** through the flange portion **37** of the door body **18**, thereby preventing the dew condensation water from entering the ice storage room **12** from a gap between the door body **18** and the containing wall **38**.

As shown in FIG. **3**, a projecting portion (a sandwiching portion) **40**, which projects toward the containing wall **38** side, is provided on an outer surface of the bearing portion **32** of the fixed-side hinge **26** at a position where this projecting portion **40** faces the containing wall **38** and where the projecting portion **40** does not come into contact with an inner surface (a surface facing the outer surface of the bearing portion **32**) of the guide portion **34** when the door body **18**, is at the closed position but the same comes into contact with the inner surface of the guide portion **34** when the door body **18** is at the open position. A separation dimension L**1** between a projecting end of this projecting portion **40** and the containing wall **38** is set to be smaller than a thickness direction L of the guide portion **34**. On the other hand, a separation dimension L**2** between the outer surface of the bearing portion **32** excluding a region where the projecting portion **40** is provided and the containing wall **38** is set to be larger than the thickness dimension L of the guide portion **34** (L**1**<L<L**2**). That is, when the inner surface of the guide portion **34** have moved to the position at which it comes into contact with the projecting portion **40** by the pivoting movement of the door body **18** from the closed position to the open position, the guide portion **34** is sandwiched and held between the projecting portion **40** and the containing wall **38**, thereby holding the door body **18** at the open position as shown in FIG. **5**.

A rear side of the projecting portion **40** in a moving direction of the guide portion **34** when pivoting the door body **18** from the closed position toward the open position, i.e., a side with which the open end portion **34***a* of the guide portion **34** comes into contact first is inclined to smoothly protrude from the outer surface of the bearing portion **32**. As a result, the open end portion **34***a* of the guide portion **34** that moves while being guided by the outer surface of the bearing portion **32** is configured to smoothly move onto the projecting portion **40** while being guided by the inclined surface.

[Operation of Embodiment 1]

An operation of the door body holding structure according, to Embodiment 1 will now be described:

As shown in FIG. **1** and FIG. **4**, in a state that the door body **18** is set at the closed position, when pivoting the door body **18** toward the open position, an operator holds the front end of the door body **18** to pivot the door body **18** toward the upper side, whereby the guide portion **34** of each movable-side hinge **28** is gradually contained in the containing space S between the corresponding fixed-side hinge **26** and the containing wall **38**. Since the open end portion **34***a* of the guide portion **34** is placed on the containing space S side to be apart from the front, end of the arc-shaped portion **38***b* of the containing wall **38** when the door body **18** is placed at the closed position, the pivoting, movement is not blocked, by contact of the guide portion **34** with the containing wall **38** on the initial stage that the door body **18** is pivoted from the closed position toward the open position thus achieving the smooth pivoting movement of the door body **18**. Additionally, since the separation dimension L**2** between the outer surface of the bearing portion **32** of the fixed-side hinge **26** excluding the region where the projecting portion **40** is provided and the containing wall **38** is set to be larger than the thickness dimension L of the guide portion **34**, the guide portion **34** freely moves in the containing space S, and the door-body **18** smoothly pivots.

When the open end portion **34***a* of the guide portion **34** gets across the position at which the projecting portion **40** of the fixed-side hinge **26** is formed in association with the pivoting movement of the door body **18**, the projecting portion **40** comes into contact with the inner surface of the guide portion **34**. As described above, since the separation dimension L**1** between the projecting portion **40** and the containing wall **38** is set to be smaller than the thickness, dimension L of the guide portion **34**, the guide portion **34** is sandwiched and held between the projecting portion **40** and the containing wall **38** as shown in FIG. **5**. Specifically, when the open end portion **34***a* of the guide portion **34** gets over the projecting portion **40**, the containing wall **38** is elastically deformed, whereby the guide portion **34** is sandwiched and held by elastic force of the containing wall **38**. Moreover, when the door body **18** is pivoted to the open position, a gravity center of the door body **18** moves to the cabinet **16** side from the pivot portions of the hinge devices **24**, **24**, and hence the door body **18** is rested against the front surface of the cabinet **16**. That is, the door body **18** is held at the open position by not only displacement of a position, of its gravity center but also a sandwiched state of each guide portion **34** between the protecting portion **40** and the containing wall **38**, whereby the door body **18** is not easily pivoted toward the closed position by vibration and others involved by an operation of the ice making mechanism. Therefore, when taking out ice pieces from the ice storage room the operator can freely use both hands, and an operation of taking out the ice pieces can be facilitated. Additionally, the simple structure that the projecting portion **40** is just formed at a part of the bearing portion **32** of each fixed-side hinge **26** is provided, and hence a cost is not greatly increased.

When returning the door body **18** at the open position to the closed position, the front end of the door body **18** is grasped to pivot the door body **18** toward the lower side. At this time, although a certain degree of resistance is imposed until the open end portion **34***a* of the guide portion **34** moves away from the projecting portion **40** of the bearing portion **32**, the door body **18** is smoothly pivoted to reach the closed position after the open end portion **34***a* of the guide portion **34** moves

away from the projecting portion **40**. That is, at the time opening or closing the door body **18**, force is required only when pressing the guide portion **34** into the space between the projecting portion **40** and the containing wall **38** acid when pilling the guide portion **34** from the space between the projecting portion **40** and the containing wall **38**, but the door body **18** can be easily and smoothly pivoted in any other case, and a burden of an opening/closing operation is not increased. Further, when pressing the guide portion **34** into the space between the projecting portion **40** and the containing wall **38**, since a continuously provided portion between the projecting portion **40** and the bearing portion **32** is smoothly inclined as described above, considerably large press force is not required. Furthermore, in a state that the guide portion **34** has been pulled out from the space between the projecting portion **40** and the containing wall **18**, the gravity center of the door body **18** gets closer to the front side (the side apart from the cabinet **16**) from the pivot portions of the hinge devices **24**, and the door body **18** is pivoted toward the closed position by its own weight, whereby the door body **18** is assuredly placed at the closed position where the lower surface thereof is in contact with the inclined surface portion **22**, thereby hermetically closing the ice discharge opening **10***a*. It is to be noted that, at the closed position, the open end of the flange portion **37** of the door body **18** is placed in the containing space S apart from the front end of the arc-shaped portion **38***b* of the containing wall **38** over the entire length, whereby the dew condensation water that flows down on the front surface of the cabinet **16** flows down on the surface of the door body **18** through the flange portion **37**, thereby preventing the dew condensation water from entering the ice storage room **12** from the gap between the door body **18** and the containing wall **38**.

Embodiment 2

FIG. **6** and FIG. **7** show a door body holding structure according to Embodiment 2, and a basic configuration is equal to that in Embodiment 1, thereby giving a description on differences alone. Moreover, like reference, numerals denote the like members.

Although the projecting portion **40** is provided to the bearing portion **32** of the fixed-side hinge **26** in Embodiment 1, a projecting portion is provided on a containing wall side to sandwich and hold a guide portion between the projecting portion and a bearing portion in Embodiment 2. That is, a plate member **42** is additionally provided on an inner surface of the containing wall **38** facing the bearing portion **32** along the vertical portion **38***a*, and a projecting portion **42***a* that bulges in a direction apart from the containing wall **38** (the bearing portion **32** side) is formed at an upper end portion of plate member **42** in a bending manner. A separation dimension L**3** between a projecting end of this projecting portion **42***a* and the bearing portion **32** of a fixed-side hinge **26** is set to be smaller than a thickness dimension L of a guide portion **34**. Further, as shown in FIG. **6** and FIG. **7**, the projecting portion **42***a* of the plate member **42** is set to be placed at a position where the projecting portion **42***a* is not in contact with an outer surface of the guide, portion **34** when a door body **18** is at a closed position but it is in, contact with the outer surface of the guide portion **34** when the door body **18** is at an open position. That is, in Embodiment 2, when the outer surface of the guide portion **34** reaches the position where it comes into contact with the projecting portion **42***a* by pivoting movement of the door body **18** from the closed position to the open position, the guide portion **34** is sandwiched and held between the projecting portion **42***a* and the bearing portion **32**, thereby holding the door body **18** at the open position.

As described above, in the thus configured door body holding structure according to Embodiment 2, the same operation and effect as those of Embodiment 1 can be exercised.

[Modification]

The present invention is not restricted to the configurations of the above-described embodiments, and other configurations can be appropriately adopted.

1. Although the projecting portion is provided to the plate member that is a body different from the containing wall in Embodiment 2, it is possible to adopt a configuration that the projecting portion is provided to the containing wall itself and the guide portion of the movable-side hinge is sandwiched and held between the projecting portion and the bearing portion of the fixed-side hinge.
2. Although the number of the projecting portion that comes into contact with the guide portion is one in the description of each embodiment, it is possible to adopt a configuration that a plurality of projecting portions are provided in parallel along a moving direction of the guide portion.
3. Although the containing wall is formed on the cabinet in the description of each embodiment, a containing wall (a holding portion) that is a body different from the cabinet may be arranged on the housing.
4. Although the holding structure is adopted for the door body arranged on the ice storage house in the description of each embodiment, a target on which the door body that can adopt the holding structure is arranged is not restricted to the ice storage house, and the door body can be arranged on a housing, in which an accommodation chamber that accommodates accommodation targets is defined and to which a support portion (corresponding to the cabinet in the embodiments) against which the door body can be rested when the door body is pivoted to the open position can be provided.

The invention claimed is:

**1**. A door body holding structure having a housing including an ice storage house therein and a cabinet arranged at a rear portion of an upper surface of the ice storage house and that is pivotally supported at an upper end portion of a the housing to be pivotable in a vertical direction and configured to be pivoted between a closed position at which an opening portion formed in the housing is closed and an open position at which the opening portion is opened based on upward pivoting movement from the closed position, the door body holding structure comprising:

a fixed-side hinge that is arranged on the housing;

a movable-side hinge that is arranged at an upper end portion of the door body and pivotally supported on the fixed-side hinge in a pivotable manner;

a sandwiched portion that is provided to the door body and configured to move on an outer side of the fixed-side hinge with the pivoting movement of the door body;

a flange portion that is formed at an upper end portion of the door body over the entire length in a left-and-right direction, and left and right end portions of the flange portion are configured to function as the sandwiched portion;

a holding portion that is provided to the housing at a front surface lower end portion of the cabinet and extending over the entire length of the cabinet in the left-and-right direction to define between the fixed-side hinge and itself a containing space configured to accommodate the sandwiched portion; and

a sandwiching portion that is placed in the containing space and reduces a facing gap between the fixed-side hinge and the holding portion in the containing space to be smaller than a thickness dimension of the sandwiched portion, wherein

the sandwiching portion is a projecting portion that is provided on an outer surface of the fixed-side hinge and projects toward the holding portion side and is provided at a position where the sandwiched portion is sandwiched and held between the sandwiching portion and the holding portion when the door body is at the open position, and

an open end portion of the flange portion is placed in the containing space over the entire length to be apart from a front end of an arc-shaped portion of the holding when the door body is at the closed position.

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